Freshmeo MK2P-I

Freshmeo Intermediate Relay MK2P-I 220V Instruction Manual

1. Introduction

This manual provides essential instructions for the safe and effective use of the Freshmeo Intermediate Relay MK2P-I 220V. This electromagnetic relay is designed for general-purpose control applications, offering reliable switching capabilities in various electrical circuits. Understanding its features and proper installation is crucial for optimal performance and safety.

2. Safety Information

WARNING: Electrical shock hazard. Always disconnect power before installing, servicing, or removing this device. Installation should be performed by qualified personnel in accordance with all local and national electrical codes. Ensure the relay's voltage and current ratings are compatible with your application to prevent damage or injury.

- Always wear appropriate personal protective equipment (PPE) when working with electrical systems.
- Do not operate the relay beyond its specified electrical ratings.
- Ensure proper grounding where required.
- Avoid touching live terminals.

3. Product Overview

The Freshmeo MK2P-I is an 11-pin intermediate electromagnetic relay. It features a transparent casing allowing visual inspection of its internal components and contact status. This specific model operates with a 220V AC coil voltage and is designed for socket mounting.

Image of the Freshmeo MK2P-I relay, showing its transparent casing, internal coil, and the 11 pins at the base.

Close-up view of the Freshmeo MK2P-I relay, highlighting the pin configuration and contact markings on the side.

4. Installation (Setup)

The MK2P-I relay is designed for socket mounting. Compatible sockets include PF083A, PF083A-E, and US-08. Ensure you use a compatible 11-pin socket for this relay.

1. **Mount the Compatible Socket:** Securely mount the appropriate 11-pin relay socket (e.g., PF083A) in your control panel or enclosure using screws or DIN rail clips, as applicable.
2. **Wire the Socket:** Connect the control circuit wiring to the coil terminals of the socket and the load circuit wiring to the contact terminals. Refer to the wiring diagram typically provided with the socket or your system's schematic. Ensure the correct voltage (220V AC for this model) is applied to the coil terminals.
3. **Insert the Relay:** Carefully align the 11 pins of the MK2P-I relay with the corresponding holes in the mounted socket. Gently push the relay into the socket until it is fully seated. Do not force the relay, as this may bend the pins.
4. **Verify Connections:** Double-check all wiring for correct polarity, secure connections, and proper insulation before applying power.

5. Operating Instructions

When the rated coil voltage (220V AC for this model) is applied to the relay's coil terminals, an electromagnetic field is generated. This field actuates the armature, causing the contacts to switch from their normally closed (NC) or normally open (NO) states to their opposite positions. When power to the coil is removed, the contacts return to their original states. The MK2P-I features a 2Z contact form, meaning it has two sets of changeover contacts (Double Pole Double Throw - DPDT), allowing it to control two independent circuits.

6. Maintenance

Intermediate relays generally require minimal maintenance. Adhering to these guidelines can prolong the relay's operational life:

- **Regular Inspection:** Periodically inspect the relay and its socket for signs of wear, damage, discoloration, or loose connections.
- **Cleaning:** Keep the relay and its surroundings clean and free from dust, moisture, and debris, which can impede operation, cause overheating, or lead to electrical tracking.
- **Contact Check:** If the relay is frequently switching high inductive or capacitive loads, inspect contacts for pitting, erosion, or carbon buildup. Excessive wear may indicate the need for relay replacement.
- **Environmental Conditions:** Ensure the operating environment remains within the specified ambient temperature and humidity ranges.

7. Troubleshooting

If the relay is not functioning as expected, consider the following troubleshooting steps:

- **Relay Not Energizing:**
  - Verify that the correct coil voltage (220V AC) is being supplied to the coil terminals. Use a multimeter to check voltage.
  - Ensure that the relay is properly seated in its socket and all pins are making good contact.
  - Inspect for any broken wires, loose connections, or open circuits in the control circuit.
  - Check the coil resistance (if accessible) against specifications to detect an open or shorted coil.

- **Contacts Not Switching:**
  - Ensure the coil is energizing correctly (you may hear an audible click or see an indicator if present).
  - Check the load circuit for open circuits, short circuits, or excessive load current.
  - If the relay has been in service for a long time or subjected to excessive loads, the contacts may be worn out or welded, requiring relay replacement.
- **Overheating:**
  - Ensure the ambient temperature is within the specified range (-25°C to +55°C).
  - Verify that the load current does not exceed the contact capacity (10A).
  - Check for proper ventilation around the relay and ensure it is not enclosed in a high-temperature environment.

8. Specifications

The following specifications apply to the Freshmeo Intermediate Relay MK2P-I 220V:

Parameter	Value
Model	MK2P-I
Dimensions (L×W×H)	34.5 × 34.5 × 52 mm
Contact Form	2Z (DPDT - Double Pole Double Throw)
Contact Capacity	10A at 250 VAC or 30 VDC
Coil Voltage (AC)	220V AC (50Hz)
Coil Power (AC)	≤ 2.2VA
Pick-up Voltage (AC)	≤ 80% of rated voltage
Drop-out Voltage (AC)	≥ 30% of rated voltage
Contact Resistance	≤ 50mΩ
Insulation Resistance	≥ 100MΩ (at 500V DC)
Electrical Life	1×10^5 operations
Mechanical Life	5×10^6 operations
Dielectric Strength (Between open contacts)	1000 VAC rms
Dielectric Strength (Between coil & contacts)	1500 VAC rms
Mounting Form	Socket (Compatible with PF083A, PF083A-E, US-08)
Ambient Temperature	-25°C to +55°C
Weight	85g
Material	Copper
Manufacturer	Freshmeo

Part Number	Fre3-AL87-SW8-1226